Amendments to Specification

Please amend Page 3, paragraph 4, lines 26-30 through Page 4, paragraph 1, lines 1-2 to the following:

Fig.10 depicts the separation of a small molecule 1002 and a large molecule 1004, each with the same net positive charge, and a small negatively charged molecule 1006. Application of electric field 1008 causes differential motion of the charged molecules according to their electrophoretic mobilities, with cations 1002 and 1004 moving towards the ~~anode~~ cathode 1010. In the ideal case, the anions 1006 move to the ~~cathode~~ anode 1012, though experimentally a phenomenon known as electroosmotic flow can reduce or reverse the anion to ~~cathode~~ anode motion.

Please amend page 6, line 15 to the following:

Fig. 1 depicts an example of [[a]] an apparatus for macromolecule preparation ~~apparatus~~ 100.

Please amend Page 9, paragraph 5 to the following:

One skilled in the art will recognize that in step 420, buffer 422 can be added to either side of filter [[418]] 416. Preferably, buffer 422 can be directed through fine filter 416 by applying pressure differential across filter 416. This can dislodge portions of macromolecule 104 that can become attached to fine filter 416 in fine filtration step 414. Also, one skilled in the art will appreciate that steps 414 and 420 can be repeated, providing greater separation of macromolecule 104 from fine components 213.

Please amend page 12, line 27 through page 13, line 3 to the following:

Rough separation circuit 700 also includes a number of pressure transducers 740, 742, 744 and 746, whereby the pressure in the respective portions of the circuit can be measured; compressed air or steam 722,723,724, and 748 that can be employed for cleaning or purging the system; flow sensor 750; and waste site [[752]] 792. The downstream boundary of rough separation circuit 700 is valve 714, through which the liquid mixture can be directed to the desalination/fine filtration circuit 800.

Please replace the previously amended paragraph (amended 06/21/2004) at page 15, lines 6 through 27 with the following amended paragraph:

Fig. 7C depicts an aseptic fluidic interface apparatus 752 with a relief valve 758, overflow reservoir 760, and filter 766, all located on relief conduit 764. Flow sensor 718 can optionally be located on relief conduit 764 as shown. Relief conduit 764 extends from waste conduit 756 at a point between trap 715 and waste valve 704, and ends in fluid communication with the external environment through filter 766. Filter 766 excludes at least a portion of external contaminants from at least a portion of the relief conduit. The filter can be located anywhere between valve 758 and the distal end of conduit 764, preferably at the end as depicted in Fig. 7C. Typically, the filter is selected to exclude microorganisms and particulate contaminants, e.g., the filter excludes contaminants having a diameter greater than about 1 μm, more typically greater than about 0.5 μm, and preferably greater than about 0.2 μm. Overflow reservoir 760 can be located anywhere between valve 758 and the distal end of conduit 764, preferably between ~~flow sensor 718~~ filter 766 and valve 758 as depicted in Fig. 7C. Flow sensor 718, which can be located anywhere in apparatus 752, is typically at waste conduit 756 or relief conduit 764. If the overflow elements are employed, flow sensor 718 is typically at conduit 764 as shown, preferably between valve 758 and reservoir 760. A second filter 768 can be employed at conduit 764, e.g., between valve 758 and trap 715. Filter 768 is sized smaller than filter 766, i.e., excludes at least a portion of contaminants that pass through filter 766. For example, filter 768 is typically sized to exclude particles less than about 75 % of the size excluded by filter 766, more typically, less than about 50 % of the size excluded by filter 766, an preferably, less than about 25% of the size excluded by filter 766.

Please amend the description of the amendment from 06/21/2004 which refers to "page 16, line 28 through page 17, line 9" to refer to "page 15, line 28 through page 16, line 9" as suggested by Examiner.

Please replace the previously amended paragraph (amended 06/21/2004) at page 16, line 28 through page 17 line 7 with the following amended paragraph:

Fig 7D depicts still other options for apparatus 752. One or more valves, e.g., inlet and outlet valves 703 and 702 can be double isolated gate valves. As used herein, a double isolated gate valve is a single valve unit that can be considered as two coupled three-way valves. Typically, a double isolated gate valve has minimal dead volume between each of its three-way valves. These valves can allow other options for fluid flow. For example, wash fluid can be directed into the system through one such valve, e.g., into outlet valve ~~703~~ 702. The wash fluid can then be directed out of the remaining output of double isolated outlet gate valve ~~703~~ 702 to waste site 720, or alternatively, into sampling conduit 754, up to double isolated inlet gate valve ~~702~~ 703, and then to waste site 720.